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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/821,350	04/09/2004	Robert E. Cypher	5681-00301	1125
35690	7590	07/31/2009		
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. P.O. BOX 398 AUSTIN, TX 78767-0398			EXAMINER ELAND, SHAWN	
			ART UNIT 2185	PAPER NUMBER
			NOTIFICATION DATE 07/31/2009	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/821,350	<b>Applicant(s)</b> CYPHER ET AL.	
	<b>Examiner</b> SHAWN ELAND	<b>Art Unit</b> 2185	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 04/09/04 & 08/23/04.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Specification Objections***

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

### ***Claim Objections***

Claims 15 & 28 are objected to because of the following informalities:

The phrase "an other" (line 7 of claim 15 and line 1 of claim 28) is a typo. Changing the word to "another" would make it correct.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 30 are rejected under 35 U.S.C. 102(b) as being anticipated by **Charlesworth** ("The Sun Fireplane System Interconnect", 2001 by ACM/IEEE SC2001).

In regard to claims 1, 8, & 16, Charlesworth teaches:

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a node including an active device, an interface, a memory, and an address network coupling the active device, the interface, and the memory (**section 3; figure 3**);

an inter-node network (**figure 3 - SSM Interconnect**) configured to communicate coherency messages between the node and an additional node, wherein the additional node is configured to send on the inter-node network a coherency message requesting an access right to a coherency unit (**section 3; figure 3; section 6.1**);

wherein the interface (**SSM Agent in figure 3**) is configured to receive the coherency message via the inter-node network and to responsively send a proxy address packet on the address network (**section 3; section 6.2**);

wherein in response to receiving the proxy address packet, the memory is configured to:

provide the interface with data corresponding to the coherency unit (**sections 6.3 – 6.4**) and an indication of a global access state of the coherency unit in the node if the global access state is not a modified state (**section 5**); and

send an additional proxy address packet on the address network if the global access state is the modified state (**section 5**).

Regarding claims 2, 13, & 17, Charlesworth teaches wherein if the active device is an owner of the coherency unit, the active device is configured to ignore the proxy address packet (**section 8.1, step 3**) and to respond to the additional proxy address packet (**section 5 – the line must be both modified and Global Modified**).

Regarding claim 3, Charlesworth teaches wherein the additional node includes an additional active device, an additional interface, and an additional address network configured to

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convey address packets between the additional active device and the additional interface (**section 3; figure 3, section 6.1**).

Regarding claims 4, 10, & 18, Charlesworth teaches wherein the coherency message requests a write access right to the coherency unit (**section 3**), wherein the proxy address packet is a proxy read-to-own packet (**section 6.2 – “Remote\_ReadToOwn(R\_RTO)”**).

Regarding claims 5, 11, & 19, Charlesworth teaches wherein the additional proxy address packet is a proxy read-to-own-modified packet (**sending a ReadToOwn packet under gM will make this true**).

Regarding claims 6, 12, & 20, Charlesworth teaches wherein if the active device is the owner of the coherency unit, the active device is configured to transition an ownership responsibility for the coherency unit upon receipt of the proxy read-to-own-modified packet) and to send data corresponding to the coherency unit to the interface in response to receipt of the proxy-read-to-own-modified packet, wherein the active device transitions an access right to the coherency unit upon sending the data (**sections 6.1 – 6.4; ownership is transferred on a ReadToOwn command**).

Regarding claim 7, Charlesworth teaches wherein the node is a home node for the coherency unit (**section 5, 1<sup>st</sup> paragraph**).

Regarding claim 9, Charlesworth teaches wherein in response to the proxy address packet, the memory is configured to update the global access state of the coherency unit in the node (**section 5**).

Regarding claim 14, Charlesworth teaches wherein the interface includes a global access state cache indicating global access states of a plurality of recently accessed coherency units in

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the node, wherein the interface is configured to check the global access state cache for the global access state of the coherency unit in the node **(section 5)**, wherein if the global access state is not included in the global access state cache, the interface is configured to send the proxy address packet to the memory **(section 5 - the CDC is used to speed up access to the global access states that are stored in memory)**.

Regarding claim 15, Charlesworth teaches:

wherein in response to receiving an additional coherency message requesting an access right to an additional coherency unit, the interface is configured to check the global access state cache for a global access state of the additional coherency unit **(section 5)**;

wherein if the global access state of the additional coherency unit is the modified state, the interface is configured to send on the address network another proxy address packet of a same type of proxy address packet as the additional proxy address packet **(section 5)**;

wherein if the active device is an owner of the additional coherency unit, the active device is configured to respond to the other proxy address packet **(section 5 – the line must be both modified and Global Modified)**.

In regard to claim 21, Charlesworth teaches:

means for communicating coherency messages between a plurality of nodes **(section 3; figure 3; sections 6.1 – 6.4)**;

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a node of the plurality of nodes, wherein the node includes a plurality of devices and means for communicating address packets between the plurality of devices, wherein the plurality of devices includes an active device, a memory, and a means for sending and receiving coherency messages on the means for communicating coherency messages (**section 3; figure 3**);

an additional node of the plurality of nodes, wherein the additional node is configured to send a coherency message requesting an access right to a coherency unit on the means for communicating coherency messages (**section 3; figure 3; sections 6.1 – 6.4**);

wherein in response to receiving the coherency message via the means for communicating coherency messages, the means for sending and receiving coherency messages is configured to send a proxy address packet to the memory on the means for communicating address packets (**section 3; figure 3; sections 6.1 – 6.4**);

wherein the memory is configured to respond to the proxy address packet by:

sending the means for sending and receiving coherency messages data corresponding to the coherency unit (**sections 6.3 – 6.4**) and an indication of the maximum allowable access right of the plurality of devices to the coherency unit if the maximum allowable access right is not write access (**section 5**); and

sending an additional proxy address packet on the means for communicating address packets if the maximum allowable access right is write access (**section 5**).

In regard to claim 22, Charlesworth teaches:

a node including a plurality of devices and an address network configured to convey address packets between the plurality of devices, wherein the plurality of devices includes an

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active device, a memory subsystem, and an interface to an inter-node network (**section 3; figure 3**);

an additional node coupled to send the node a coherency message requesting an access right to a coherency unit via the inter-node network (**section 3; figure 3; sections 6.1 – 6.4**);

wherein in response to receiving the coherency message via the inter-node network, the interface is configured to send one of a plurality of types of proxy address packet on the address network dependent on a global access state of the coherency unit in the node, wherein if the interface does not have an indication of the global access state of the coherency unit in the node, the interface is configured to speculatively send a type of proxy address packet associated with a shared global access state (**section 3; figure 3; sections 6.1 – 6.4; see also, rejection for claim 1, above**);

wherein if the active device is an owner of the coherency unit, the active device is configured to ignore the type of proxy address packet (**section 8.1, step 3**);

wherein in response to the type of proxy address packet, the memory subsystem is configured to send a different type of proxy address packet on the address network if the global access state of the coherency unit is a modified global access state (**section 5**).

Regarding claim 23, Charlesworth teaches wherein the coherency message requests a read access right to the first coherency unit (**section 3**), wherein the type of proxy address packet is a proxy memory read packet (**sections 6.2 – 6.4**).

Regarding claim 24, Charlesworth teaches wherein if the global access state of the coherency unit in the node is a modified state, the memory subsystem is configured to



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responsively send a proxy read-to-share-modified address packet on the address network packet **(sending a ReadToShare packet under gM will make this true).**

Regarding claim 25, Charlesworth teaches wherein if the active device is the owner of the coherency unit, the active device is configured to send data corresponding to the coherency unit to the interface in response to receipt of the proxy-read-to-share-modified packet **(section 8.1, step 5).**

Regarding claim 26, Charlesworth teaches wherein if the active device is the owner of the coherency unit, the active device is configured to transition an ownership responsibility for the coherency unit upon receipt of the proxy read-to-share-modified packet **(section 6.1 – 6.4; the ReadToShare commands).**

Regarding claim 27, Charlesworth teaches wherein the coherency message requests a write access right to the coherency unit **(section 3)**, wherein the type of proxy address packet is a proxy read-to-own packet **(sections 6.1 – 6.4; the ReadToOwn commands).**

Regarding claim 28, Charlesworth teaches wherein the plurality of devices includes an other active device **(figure 3)**, wherein if the other active device has a read access right to the coherency unit, the other active device is configured to transition the read access right to an invalid access right upon receipt of the proxy read-to-own packet **(section 6.1; the ReadToOwn command invalidates all other copies of the data).**

Regarding claim 29, Charlesworth teaches wherein if the global access state of the coherency unit in the node is a modified global access state, the memory subsystem is configured to responsively send a proxy read-to-own-modified address packet on the address network **(sending a ReadToOwn packet under gM will make this true).**

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Regarding claim 30, Charlesworth teaches wherein if the active device is the owner of the coherency unit, the active device is configured to transition an ownership responsibility for the coherency unit upon receipt of the proxy read-to-own-modified packet and to send data corresponding to the coherency unit to the interface in response to receipt of the proxy-read-to-own-modified packet, wherein the active device transitions an access right to the coherency unit upon sending the data (**sections 6.1 – 6.4; ownership is transferred on a ReadToOwn command**).

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following teach nodes on an inter-node network:

***Liencres*** (US 5,434,993)

***Hagersten*** (US 6,449,700, US 5,897,657, US 5,950,226, & US 5,940,860)

***Rowlands*** (US 6,948,035)

***Chen*** (US 6,931,496)

***Nesheim*** (US 5,897,664)

***Landin*** (US 2005/0005074)

***Examiner Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Eland whose telephone number is (571) 270-1029. The examiner can normally be reached on Monday - Thursday from 7:30am to 5:00pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough, can be reached on (571) 272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Sanjiv Shah/  
Supervisory Patent Examiner, Art Unit 2185

/Shawn Eland/  
Examiner, Art Unit 2188  
7/29/2009